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**Steele et al.**

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(54) **TAPE MEASURE**

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CPC ..... **G01B 3/1041** (2013.01); **G01B 3/1005**  
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G01B 3/1084

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See application file for complete search history.

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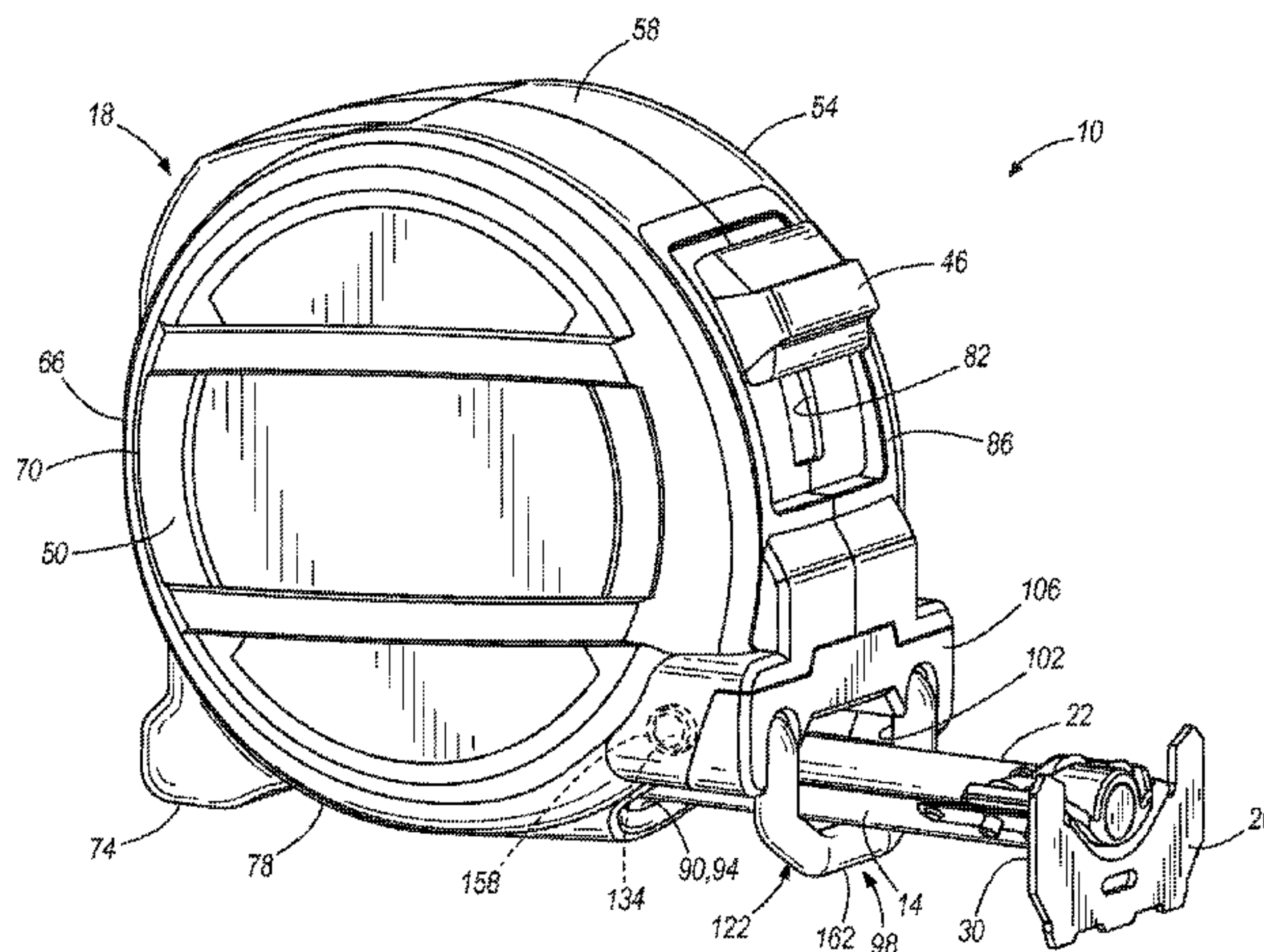
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(57) **ABSTRACT**

A tape measure includes a housing arranged to substantially  
enclose an internal cavity, the housing defining a tape port,  
and a tape positioned partially within the housing, the tape  
including an end portion that extends through the tape port  
and out of the housing. A hook is coupled to the end portion  
and a finger guard assembly is coupled to the housing and  
spaced apart from the tape port. The end portion extends  
through an aperture in the finger guard assembly and is mov-  
able between a retracted position in which the hook abuts the  
finger guard assembly and an extended position in which the  
hook is spaced apart from the finger guard assembly.

**18 Claims, 3 Drawing Sheets**



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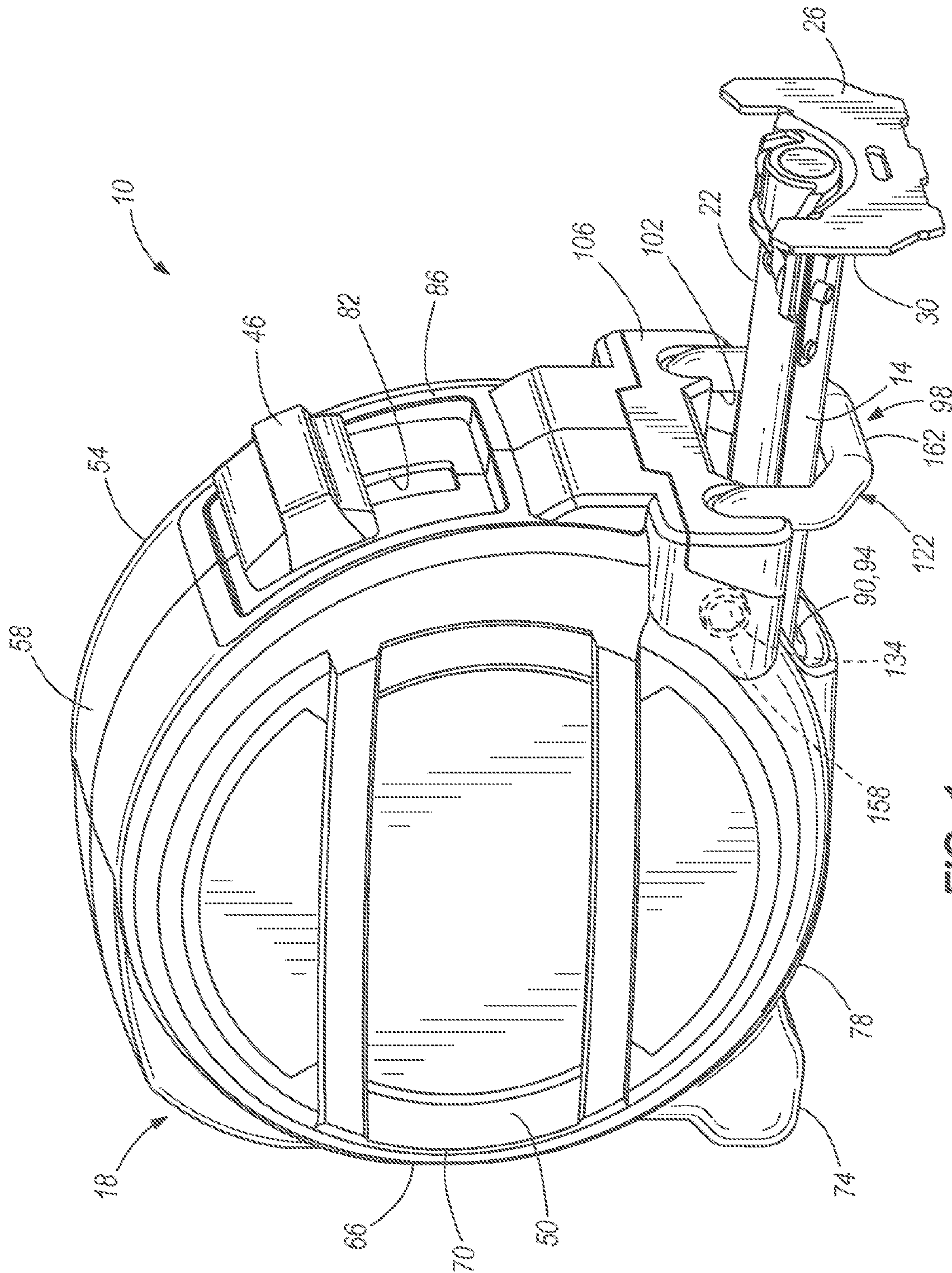
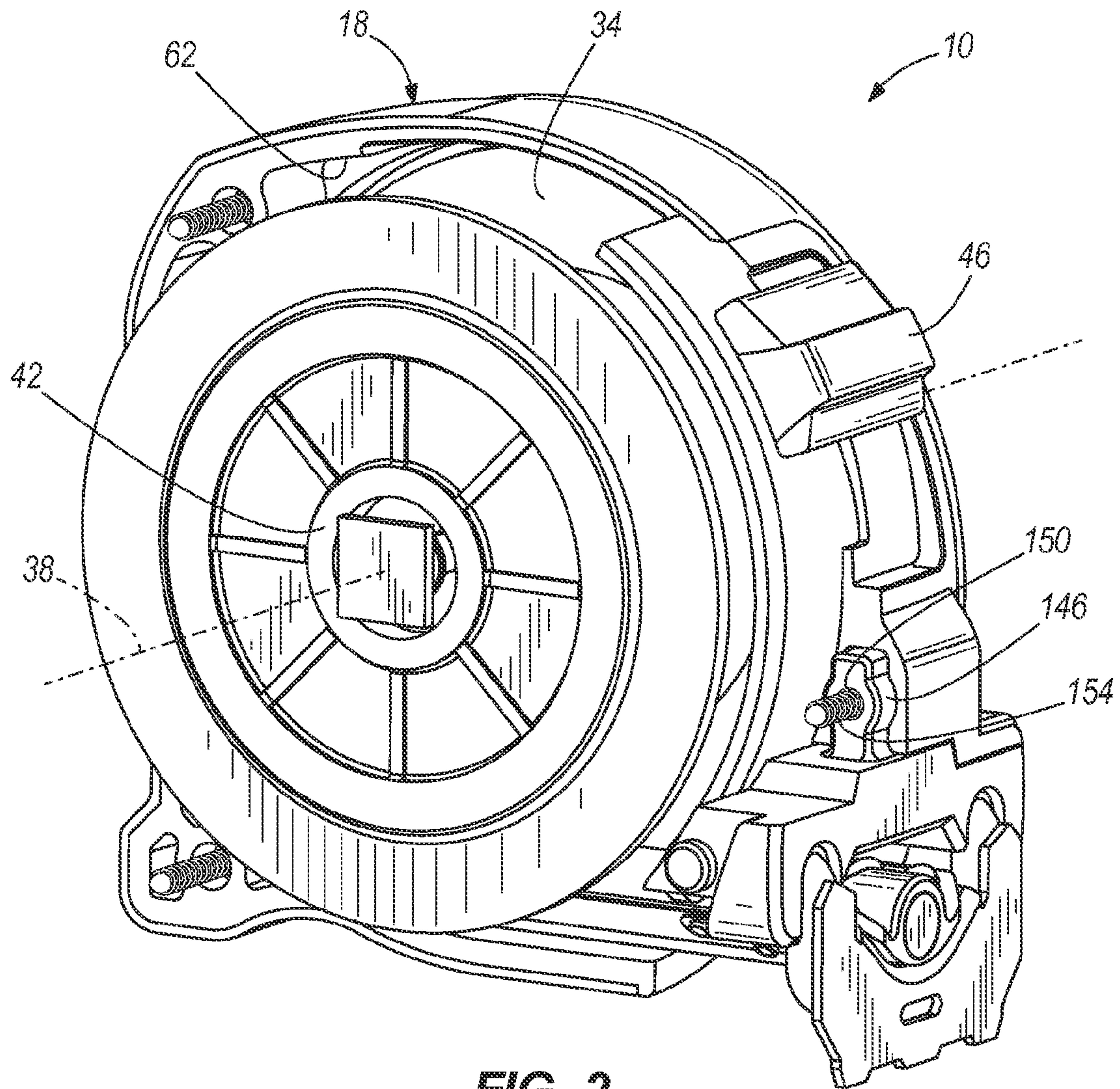


FIG. 1



**FIG. 2**



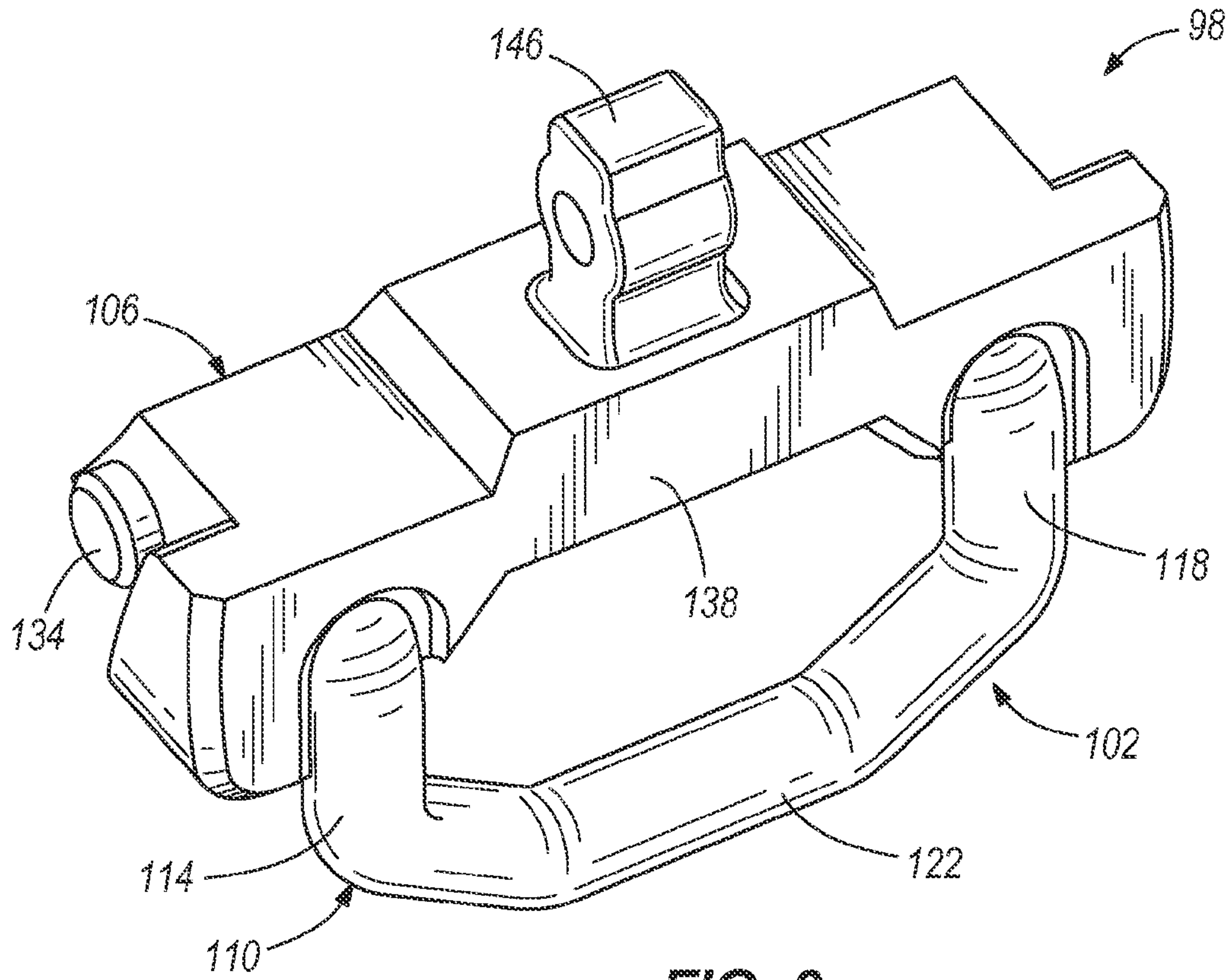


FIG. 3

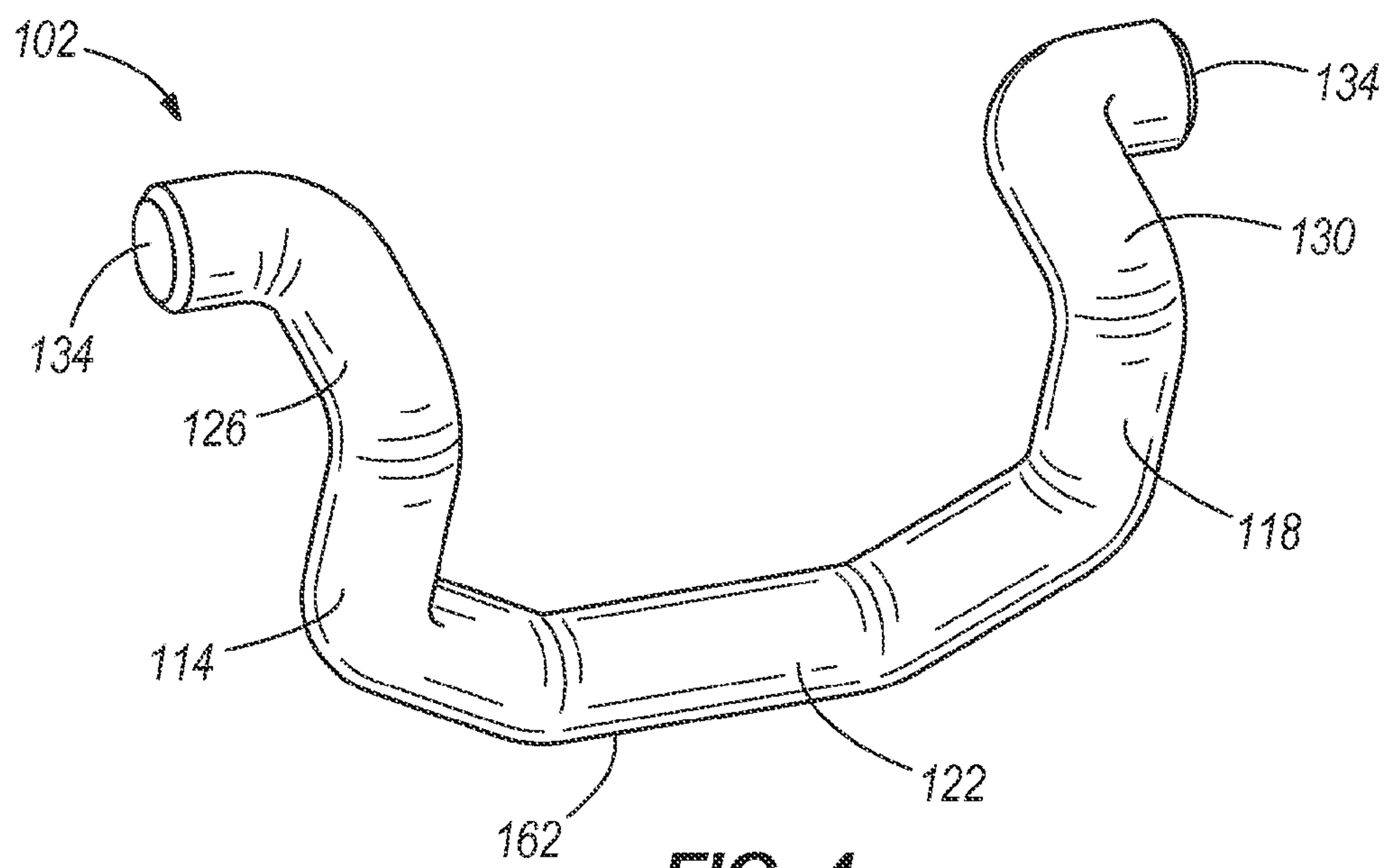


FIG. 4



# 1

## TAPE MEASURE

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. application Ser. No. 13/561,773 filed Jul. 30, 2012, now U.S. Pat. No. 8,806,770, which claims priority to U.S. Provisional Patent Application No. 61/513,283, filed on Jul. 29, 2011, U.S. Provisional Patent Application No. 61/607,060, filed on Mar. 6, 2012, and U.S. Provisional Patent Application No. 61/656,297, filed on Jun. 6, 2012, the entire contents of which are incorporated by reference herein.

### BACKGROUND

The present invention relates to measurement devices, and in particular, the invention relates to a tape measure, and more specifically, a tape measure with a guard member.

### SUMMARY

In one embodiment, the invention provides a tape measure. The tape measure includes a housing assembly defining a cavity and a tape port from which to extend and retract a measuring tape. The measuring tape forms a spool rotatably coupled about an axis. A hook member is fixedly coupled to an end portion of the measuring tape. A U-shaped guard member extends from the housing assembly adjacent the tape port. The guard member is configured to engage the hook member when the measuring tape is retracted into the housing assembly.

In another embodiment, the invention provides a tape measure. The tape measure includes a housing assembly defining a cavity and a tape port from which to extend and retract a measuring tape. The measuring tape forms a spool rotatably coupled about an axis. A hook member is fixedly coupled to an end portion of the measuring tape. A finger guard assembly extends from the housing assembly adjacent the tape port. The finger guard assembly includes a U-shaped guard member and a guard support member and is configured to engage the hook member when the measuring tape is retracted into the housing assembly.

In another construction, the invention provides a tape measure that includes a housing arranged to substantially enclose an internal cavity, the housing defining a tape port, and a tape positioned partially within the housing, the tape including an end portion that extends through the tape port and out of the housing. A hook is coupled to the end portion and a finger guard assembly is coupled to the housing and spaced apart from the tape port. The end portion extends through an aperture in the finger guard assembly and is movable between a retracted position in which the hook abuts the finger guard assembly and an extended position in which the hook is spaced apart from the finger guard assembly.

In another construction, the invention provides a tape measure that includes a housing arranged to substantially enclose an internal cavity, the housing defining a tape port and a finger guard assembly coupled to the housing and cooperating with the housing to define a finger gap. A tape is positioned partially within the housing and includes an end portion. The tape extends through the tape port, through the finger gap, and through an aperture in the finger guard assembly. A hook is coupled to the end portion and is operable to contact the finger guard assembly to inhibit retraction of the end portion past the finger guard assembly and into the finger gap.

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In another construction, the invention provides a tape measure that includes a housing arranged to substantially enclose an internal cavity, the housing defining a tape port, and a finger guard assembly coupled to the housing and defining an opening. A tape is at least partially disposed within the housing. The tape is movable from a retracted position to an extended position by passing substantially linearly through the tape port and the opening. A finger gap is defined between the tape port and the finger guard, wherein a portion of tape within the finger gap is disposed outside of the housing.

Other aspects of the invention will become apparent by consideration of the detailed description and accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a tape measure according to one construction of the invention.

FIG. 2 is a perspective view of the tape measure of FIG. 1 with a first side wall removed.

FIG. 3 is a perspective view of a finger guard assembly of the tape measure of FIG. 1.

FIG. 4 is a perspective view of a finger guard of the finger guard assembly of FIG. 3.

### DETAILED DESCRIPTION

Before any constructions of the invention are explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other constructions and of being practiced or of being carried out in various ways.

FIGS. 1 and 2 illustrate a length measurement device, more specifically, a tape measure 10. The tape measure 10 includes a coilable measuring tape 14 and a housing assembly 18.

As illustrated in FIG. 1, a variable-length extended segment 22 of the measuring tape 14 is retractable and extendable from the housing assembly 18. A hook member 26 is fixedly coupled to an end portion 30 of the measuring tape 14. The remainder of the measuring tape 14 forms a spool 34 rotatably disposed about an axis 38 of the tape measure 10 (FIG. 2). As shown in FIG. 2, a retraction mechanism 42 is coupled to the spool 34 to provide for powered retraction of the measuring tape 14. The retraction mechanism 42 may include an elongated coiled spring for motive force. A tape lock 46 is provided to selectively engage measuring tape 14, such that the extended segment 22 of the measuring tape 14 remains at a desired length.

Referring to FIG. 1, the housing assembly 18 includes a first side wall 50, a second side wall 54, and a peripheral wall 58 connecting the first side wall 50 and the second side wall 54. The first side wall 50, second side wall 54, and peripheral wall 58 define an internal cavity 62 (FIG. 2) in which the spool 34 and retraction mechanism 42 are housed. Referring to FIG. 1, each of the first side wall 50 and the second side wall 54 has a substantially circular profile 66. In other embodiments, the side walls may be rectangular, polygonal, or any other desired shape. Portions of the housing assembly 18 may be co-molded or separately formed of a resilient material, such as a natural or synthetic rubber. In the illustrated construction, the housing assembly 18 is formed with housing bumpers 70 and a support leg 74 which extends from a lower portion 78 of the peripheral wall 58.



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A slot **82** is defined along a forward portion **86** of the peripheral wall **58**. The slot **82** is provided to allow for sliding movement of the tape lock **46** relative to housing assembly **18**.

Below the slot **82**, a tape port **90** is provided in the peripheral wall **58**. The tape port **90** has an arcuate shape **94**, corresponding to an arcuate cross-sectional profile of the measuring tape **14**. The tape port **90** allows for the retraction and extension of the measuring tape **14** to and from the internal cavity **62** (FIG. 2).

As shown in FIGS. 1 and 2, the tape measure includes a finger guard assembly **98**. Referring to FIG. 3, the finger guard assembly **98** includes a guard member **102** and a guard support member **106**. Exposed portions **110** of the guard member **102** are substantially U-shaped, with a first leg **114** and a second leg **118** extending from the guard support member **106**, and a connecting leg **122** extending between the first leg **114** and the second leg **118**.

Referring to FIG. 4, a first mounting extension **126** is coupled to the first leg **114**, and a second mounting extension **130** is coupled to the second leg **118**. Each of the first mounting extension **126** and the second mounting extension **130** includes a mounting boss **134**. The guard member **102** may be formed of substantially rigid material such as a metal and is preferably coated or covered with a resilient material such as rubber or plastic. In other constructions, a resilient polymer or other material is used to form the guard member **102**.

Referring to FIG. 3, the guard support member **106** is molded over the first mounting extension **126** and the second mounting extension **130** of the guard member **102**, such that the exposed portions **110** of the guard member **102** extend from a forward surface **138** of the guard support member **106**. The mounting bosses **134** extend outwardly from lateral edges **142** of the guard support member **106**. In other constructions, other methods are used to connect the guard support member **106** and the guard member **102** (e.g., thermal bonding, adhesives, fasteners, etc.).

The guard support member **106** further includes a fastener boss **146**. Referring to FIG. 2, the fastener boss **146** defines an aperture **150** for receiving a fastener **154** for coupling the guard support member **106** to the housing assembly **18**. The boss **134** of each mounting extension **126** and **130** of the guard member **102** are received by corresponding recesses **158** (FIG. 1) formed in the housing assembly **18**. The guard support member **106** may be formed of a resilient polymer or rubber material, such that the guard support member **106** provides a degree of impact resistance between the guard member **102** and the housing assembly **18** when the guard member **102** is struck by the hook member **26** or the tape measure **10** is dropped upon the guard member **102**. Additionally, the guard support member **106** can rotate relative to the housing assembly **18** about the fastener **154** (FIG. 2) when an impact is received by the guard member **102**.

Referring to FIG. 4, the guard member **102**, and more specifically the connecting leg **122**, is configured to engage the hook member **26** when the measuring tape **14** is fully retracted into the internal cavity **62** (FIG. 1). The guard member **102** also shields the housing assembly **18** from being struck by the hook member **26**. In addition, a lower surface **162** of the guard member **102** is substantially aligned with the support leg **74**, thereby allowing the tape measure **10** to stand upright on a surface to be measured as shown in FIG. 1.

Thus, the invention provides, among other things, a tape measure and more specifically a tape measure with a guard member. Although the invention has been described in detail with reference to certain preferred embodiments, variations

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and modifications exist within the scope and spirit of one or more independent aspects of the invention as described.

The invention claimed is:

1. A tape measure comprising:

- a housing arranged to substantially enclose an internal cavity, the housing defining a tape port;
- a tape positioned partially within the housing, the tape including an end portion that extends through the tape port and out of the housing;
- a hook coupled to the end portion; and
- a finger guard assembly coupled to the housing and spaced apart from the tape port, the end portion extending through an aperture in the finger guard assembly and movable between a retracted position in which the hook abuts the finger guard assembly and an extended position in which the hook is spaced apart from the finger guard assembly.

2. The tape measure of claim 1, further comprising a spool disposed within the housing and operable to support the tape within the housing when the tape is in the retracted position.

3. The tape measure of claim 1, wherein the housing defines a front surface and a bottom portion, and wherein the tape port is formed in the bottom portion and is spaced apart from the front surface.

4. The tape measure of claim 3, wherein the finger guard assembly includes a portion that is substantially flush with the front face.

5. The tape measure of claim 3, wherein the front face and the bottom portion cooperate to define a recessed corner portion between the tape port and the finger guard assembly.

6. The tape measure of claim 1, wherein the tape is outside of the housing when disposed between the tape port and the finger guard assembly.

7. A tape measure comprising:

- a housing arranged to substantially enclose an internal cavity, the housing defining a tape port;
- a finger guard assembly coupled to the housing and cooperating with the housing to define a finger gap;
- a tape positioned partially within the housing, the tape including an end portion, the tape extending through the tape port, through the finger gap, and through an aperture in the finger guard assembly; and
- a hook coupled to the end portion and operable to contact the finger guard assembly to inhibit retraction of the end portion past the finger guard assembly and into the finger gap.

8. The tape measure of claim 7, further comprising a spool disposed within the housing and operable to support the tape within the housing when the tape is in the retracted position.

9. The tape measure of claim 7, wherein the housing defines a front surface and a bottom portion, and wherein the tape port is formed in the bottom portion and is spaced apart from the front surface.

10. The tape measure of claim 9, wherein the finger guard assembly includes a portion that is substantially flush with the front face.

11. The tape measure of claim 9, wherein the front face and the bottom portion cooperate to define the finger gap between the tape port and the finger guard assembly.

12. The tape measure of claim 7, wherein the tape is outside of the housing when disposed between the tape port and the finger guard assembly.

13. A tape measure comprising:

- a housing arranged to substantially enclose an internal cavity, the housing defining a tape port;
- a finger guard assembly coupled to the housing and defining an opening;

a tape at least partially disposed within the housing, the tape movable from a retracted position to an extended position by passing substantially linearly through the tape port and the opening; and

a finger gap defined between the tape port and the finger guard, wherein a portion of tape within the finger gap is disposed outside of the housing.

**14.** The tape measure of claim **13**, further comprising a spool disposed within the housing and operable to support the tape within the housing when the tape is in the retracted position.

**15.** The tape measure of claim **13**, wherein the housing defines a front surface and a bottom portion, and wherein the tape port is formed in the bottom portion and is spaced apart from the front surface.

**16.** The tape measure of claim **15**, wherein the finger guard assembly includes a portion that is substantially flush with the front face.

**17.** The tape measure of claim **15**, wherein the front face and the bottom portion cooperate to define the finger gap between the tape port and the finger guard assembly.

**18.** The tape measure of claim **13**, further comprising a hook coupled to the end portion and operable to contact the finger guard assembly to inhibit retraction of the end portion past the finger guard assembly and into the finger gap.

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